Installation & Operational Manual

Model D6120-40-27k

Dumping Gripper Arm Lifter

Protected by US Patents 6,921,239 & 7,273,340

D6120-40-27k Gripper Arm Lifter Specifications

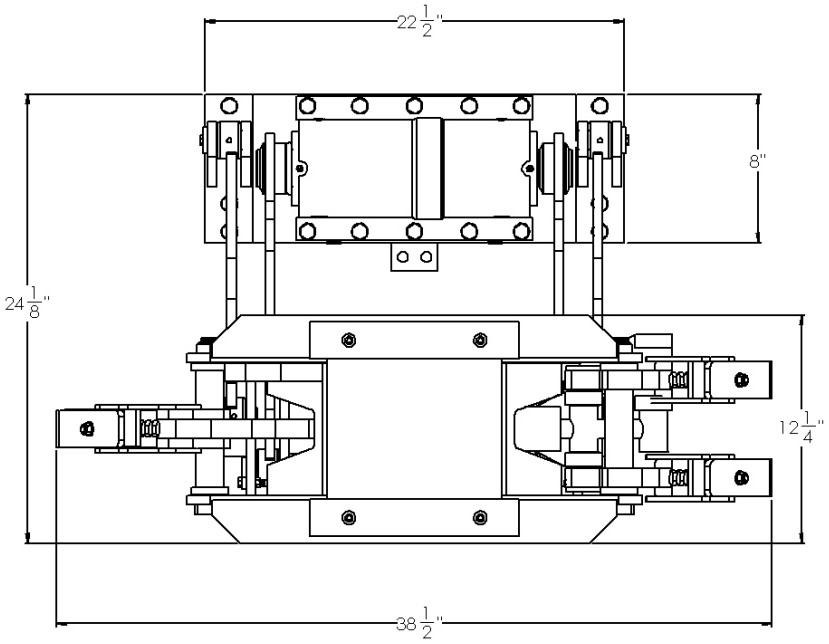
Cart Compatibility	ANSI Type B, C, D, and 55 gal. drums
Typical Mounting Application	Rearloader and Sideloader
Tipper-Bar Compatible?	No.
Flow Rate Requirement	3.5 gpm
Cycle Time	6-8 seconds (up and down)
Recommended Pressure Setting*	1,550 psi at the pressure relief valve
Maximum System Pressure	3,000 psi
Weight Capacity**	400 lbs
Dump Angle	45 degrees from the horizon
Mounting Height (ground level to top of mounting plate)	38” up to 42”.
Approximate Unit Weight (not counting packaging)	185 lbs
Hydraulic Package	Tap-In kits are sold separately
Warranty	2-years ***

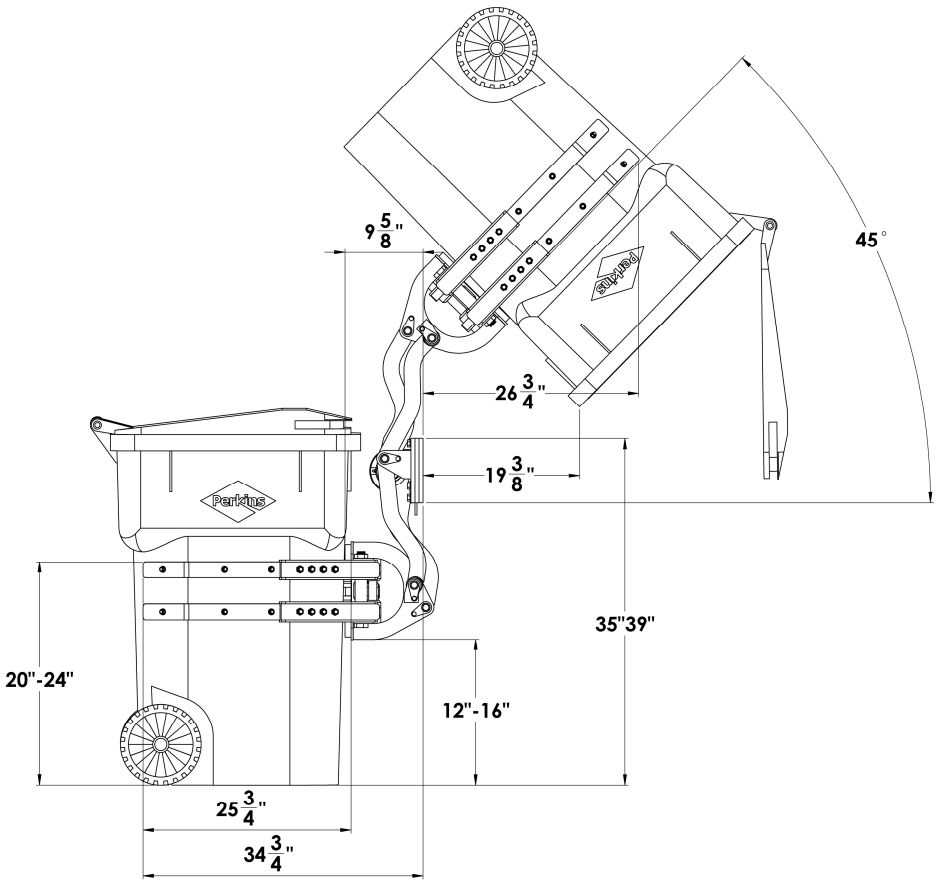
Perkins regularly makes product improvements. Specifications are subject to change without notice.

* Actual pressure required to lift a load can vary.

** Do not lift more than the recommended amount printed on the cart by the cart manufacturer or damage or injury may result.

*** See Warranty page enclosed in this manual for full details of coverage





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Cart Types

ANSI Type B carts (US-Style two-bar carts) with a dimension of 14 ¾ - 15 ¼" bar to bar spacing.

ANSI Type C Carts (European-type) Using an upper lip for lifting. Height to ground varies with size of cart.

ANSI Type D Carts (Diamond-Type)

ANSI Type G Carts (Automated Collection) Having a rounded body ideal for gripper arms to clasp around.

Note: Some ANSI Type B carts are also Type G compatible, but some carts, particularly older designs, are not. This affects gripper-arm type of lifters that rely on grasping the cart around it's body. If using a gripper arm type of lifter, check your carts and see if they have rounded corners (look for approximately 6" radius). If so, they are likely ANSI Type G compatible.

Key Hydraulic Components

Diverter Valve

Hand Valve

PO Check Valve

50/50 Splitter

Double Diverter Valve

Adjustable Flow Control

Helical Rotary Actuator

Valves are sold separately or as part of a tap-in kit. The valves are shown for reference / identification purposes only. Your specific installation may require other equipment not shown.

Please read this manual prior to installing, repairing or using this cart lifter.

✪ Installation of this equipment requires welding, painting, grinding, torching and working with high-pressure hydraulic systems. The appropriate safety equipment should be used at all times.

✪ Always follow OSHA specified lock-out procedures while working with a truck.

✪ Cart lifters weigh, on average, between 185 to 300 lbs. Do not lift the lifter onto the mounting plate by hand. Always use proper lifting equipment.

✪ Always use a chain or strap to secure the lifter in the upright position during the installation process. Unsecured lifters may fall suddenly causing injury.

✪ The truck to which the lifter is to be installed should be empty of waste. Torching and welding can ignite the contents of the truck and cause a fire.

✪ Do not weld on the truck unless a ground is in place and the battery is disconnected.

✪ Do not open/loosen any hydraulic lines unless the system is off and depressurized.

✪ Always double-check hydraulic fittings and hoses for tightness prior to reactivating the pump.

✪ Always relocate lights that need to be moved due to the position of the cart lifter to a clear and unobstructed area clearly visible to drivers.

✪ All painting of the truck/lifter after installation is complete should be done with proper ventilation and per local regulations. Do not paint over caution and warning labels.

✪ If there are any questions about the proper installation or use of the cart lifter not covered in the manual, it is recommended to call Perkins at 800-882-5292.

Do not mount the lifter to a refuse body which is not already mounted to a chassis. Chassis heights can vary and this will affect the final installed height of the cart lifter.

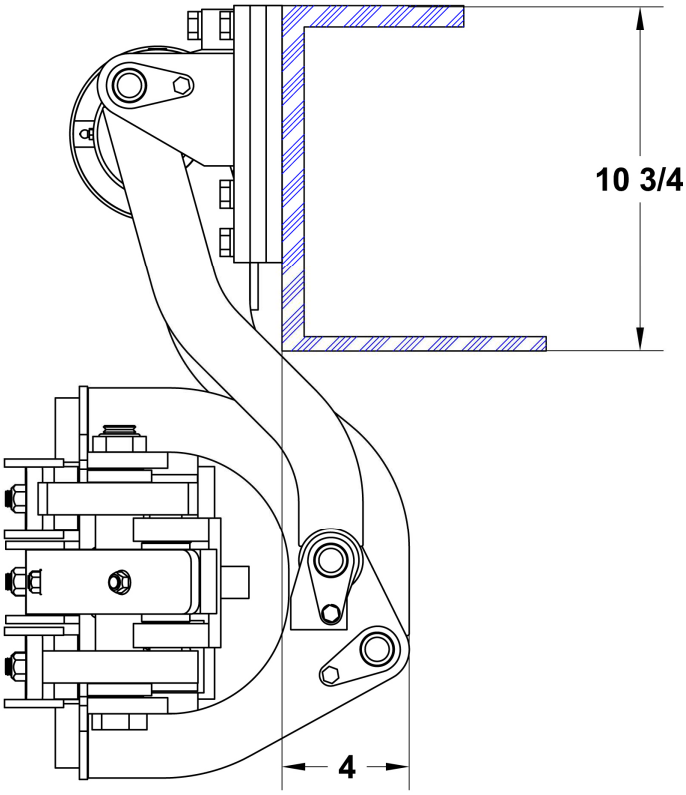
Tack weld only until all positions and clearances are verified to work well for your application.

Always work on a smooth level surface with an empty truck.

Residential-Only Installation

A residential-only installation is when the cart lifter will be mounted to the truck and the truck will not be used for collecting commercial containers (such as 1 thru 10 yard containers). A residential-only installation is very straightforward and simple and very little customization required. Therefore, a residential-only installation may take only 4-6 hours.

The D6120-40-27k is a Gripper Arm Style Cart Lifter



The first consideration when installing any Gripper Arm style cart lifter is to make sure the unit has space to store under the load sill.

Some trucks have a hopper shape that does not accept a Gripper Arm style cart lifter, so it may be necessary to use a different cart lifter model in these cases.

Find the mounting height you will need to mount your cart lifter at as instructed on the following pages. Measure from this point down 10 ¾" to check and see if the D6120-40-27k is the right model for this application.

If there is interference with a light panel, the panel may be trimmed at the customer's preference. Relocate lights if necessary.

If your truck does not have room to mount a D6120-40-27k Gripper Arm, call Perkins at 800-882-5292 for help selecting a different model.

Mark Your Centerlines

Begin by selecting whether the installation will be centered on the truck, or offset, or a double installation. Draw a centerline on the truck's loading sill.

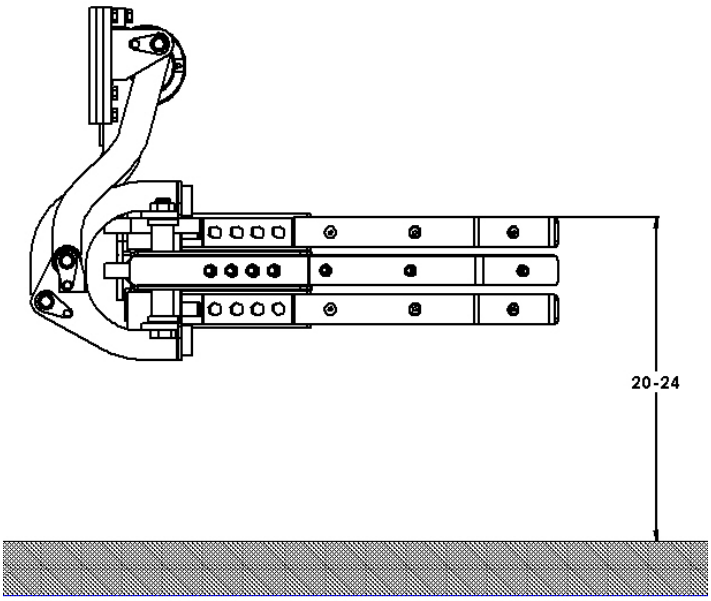
A centered installation will place the lifter directly centered on the centerline of the truck.

An offset installation will place the lifter 17 ½" from the center of the truck, (usually to the curb side) as shown in the picture at right.

A double installation will place a lifter 17 ½" to the left and 17 ½" to the right of the truck's centerline.

A typical offset installation.

Determine the Mounting Height



Grip Arm Mounting Height

The mounting height is critical to the proper function of any cart lifter. The ideal location for the upper hook is 34" off the ground, when the lifter is positioned so that the faceplate is 5 degrees tilted back from vertical as shown in the diagram at left.

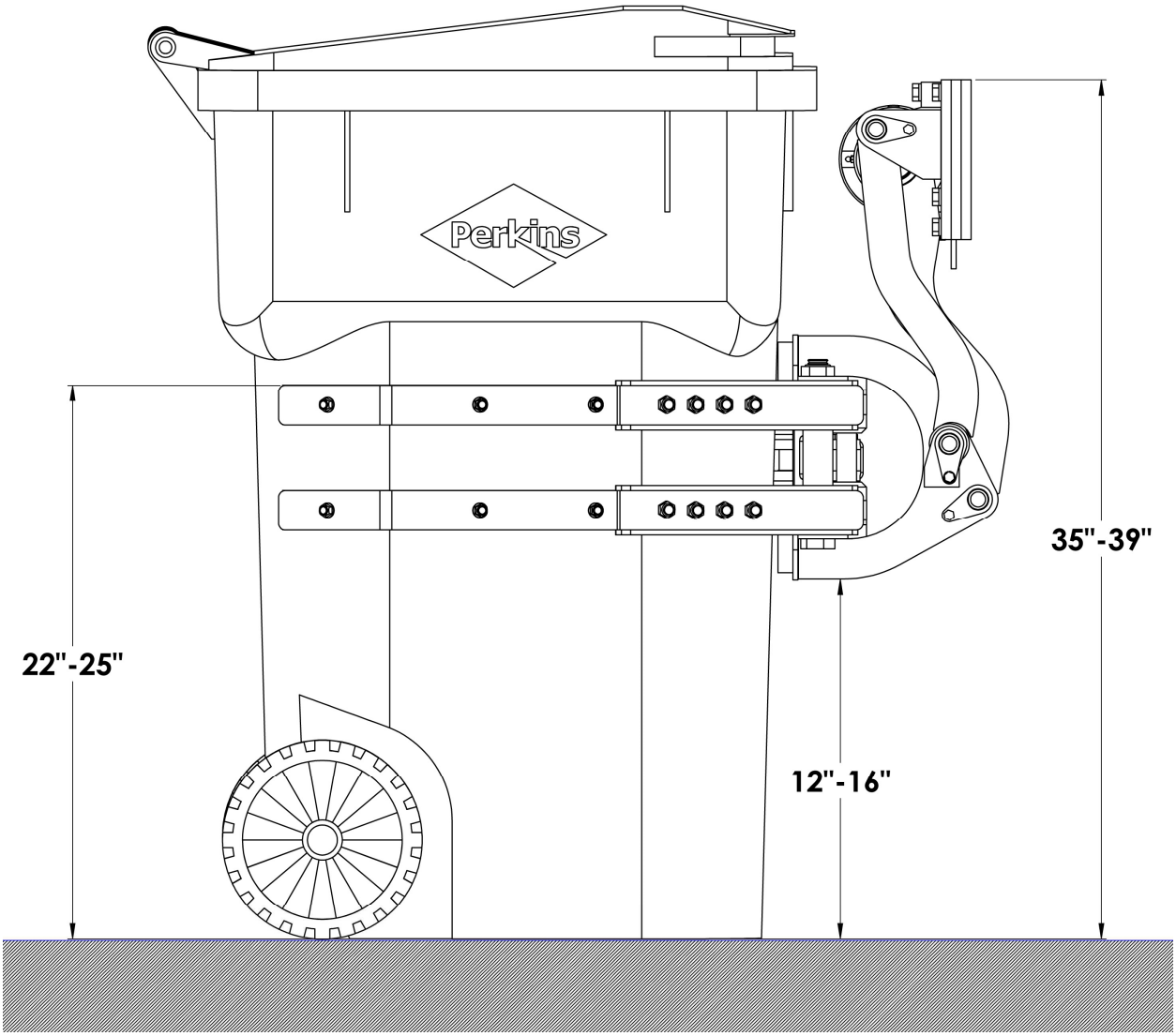
It is important that the packer body be mounted to a chassis, and the truck is empty and parked on a smooth and level surface when this mounting height is determined.

A cart lifter which has been positioned too low may kick carts away before successfully engaging them.

A cart lifter which is mounted too high will make it difficult for the operator to latch the cart at all, causing the operator to have to lift the cart onto the latch.

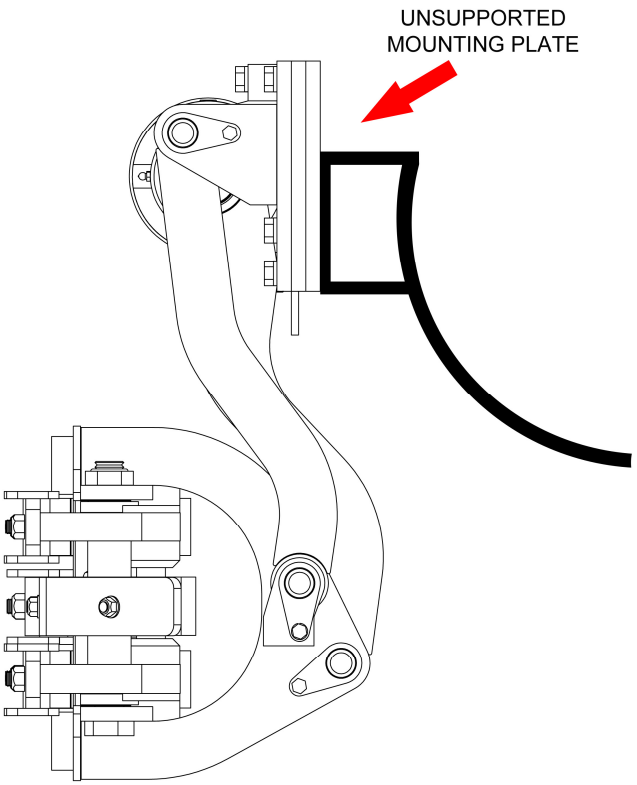
A good mounting height will make latching carts effortless with no lifting or holding the cart in place.

Positioning the Mounting Plate



** The mounting plate may be positioned as low as 39 ½" and as high as 42", as needed. The mounting plate itself should be vertical and level.*

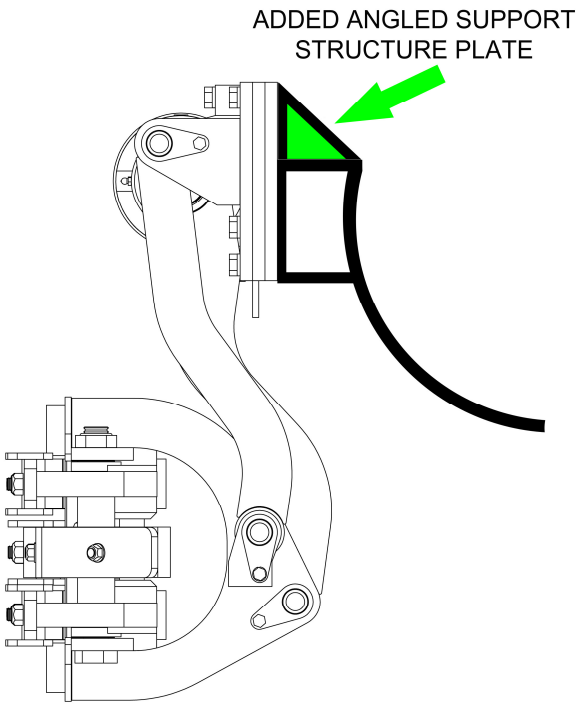
Reinforce the Mounting Plate



Dimensions shown above are an example only and will vary from truck to truck

When the mounting height is determined, the lifter's mounting plate frequently ends up being higher than the original load sill. This is normal and requires the addition of a supporting structure.

It is necessary to fully support the mounting plate to provide a rigid base for the cart lifter. An unsupported mounting plate can easily deform through normal use in a short period of time. Failure to fully support the mounting plate can lead to rapid premature failure of the cart lifter.



Perkins recommends adding steel structural tube across the entire length of the load sill. This tube becomes the new load sill.

The tube should be at least ¼" thick, and sized to allow the top of the support to mate to the top of the mounting plate. Do not extend the support tube above the mounting plate top edge.

The size needed will vary from installation to installation, use what best suits your needs.

Note: Simply adding gussets to the back of the mounting plate does <u>not</u> provide adequate support. The reinforcement should cover the entire rear of the plate and be welded fully.

Residential-Only Installation Example

A typical example of a center positioned, residential-only installation. Note the mounting plate is fully supported.

After the cart lifter and supports are tack welded in place, move the cart lifter by hand up and down carefully, making sure there are no interferences. Double check the gripper arm height to the ground. If everything appears satisfactory, the lifter's mounting plate and supports may be welded fully.

The mechanical portion of the installation is complete.

When performing a commercial installation, the same procedure of the residential installation must be followed with these additional steps:

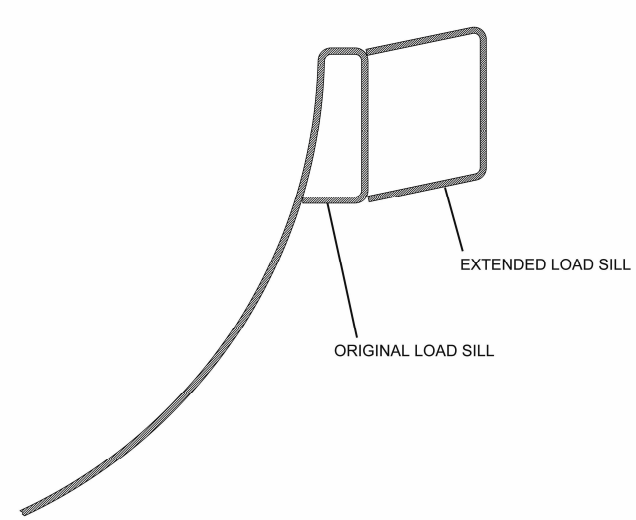
Recess The Cart Lifter

When a truck is provided with commercial container locks, the OEM will usually add an extended bumper over the original load sill.

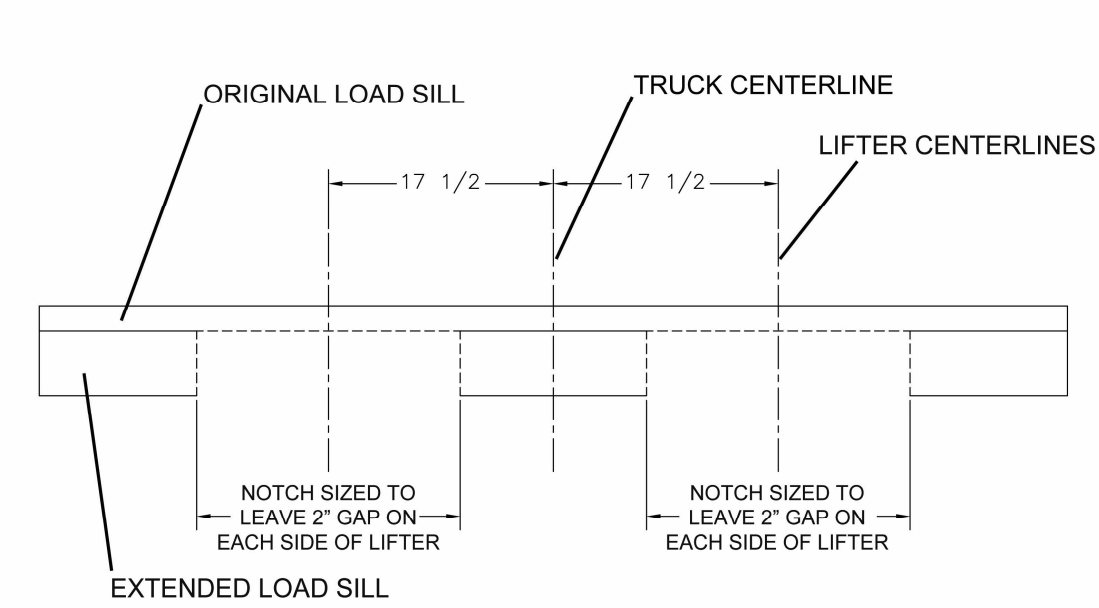
To mount a cart lifter to a truck like this, you must recess the cart lifter by cutting a notch in the extended load sill.

Cut a notch that will leave a 2” gap on either side of the lifter.

Do not cut into the original load sill. The original load sill is a structural member of the tailgate and must not be severed or the structural integrity of the tailgate will be compromised, leading to distortion and failure.



TOP VIEW OF TRUCK LOAD SILL


ORIGINAL LOAD SILL
TRUCK CENTERLINE
LIFTER CENTERLINES
17 1/2
17 1/2
NOTCH SIZED TO LEAVE 2” GAP ON EACH SIDE OF LIFTER
NOTCH SIZED TO LEAVE 2” GAP ON EACH SIDE OF LIFTER
EXTENDED LOAD SILL

Note: Be careful not to cut into the original load sill or else the structural integrity of the tailgate can be compromised. It may be necessary to add custom structure reinforcements where the lifter is to be mounted.

Add the Sill Extension (Bumper kit)

With the notches in the sill extension cut out, cap off the exposed ends and mount the mounting plate, using the correct mounting height as previously described.

It may be necessary to add customized pieces to bolster the support of the mounting plate on top or below the plate.

At this point, the lifter may stick out above or beyond the extension sill. That is normal.

Note: The size and shape of the bumper extension can vary depending on your fabrication preferences. Perkins does offer pre-made bumper extension kits, sold separately:

CA1084 – single lifter, offset to the right
CA1085 – single lifter, center mounted
CA1086 – double lifter installation

Now we add the rest of the supporting structure.

Like in the residential-only install, it is necessary to bring the load sill up to match to the top of the mounting plate and/or top of the bumper extension.

Contact with commercial containers can easily crush the cart lifter. To protect it, install a bumper extension over the OEM-supplied sill extension. The bumper should be sized and positioned so that contact with a commercial container is not possible.

Moving the Container Locks

At this point, the bumper extension is now sticking out past the OEM-supplied sill extension by “X” inches. This dimension might typically be about 3” or 4”.

Measure this dimension. The distance the extension has shifted out is the distance the container locks must be extended.

Carefully torch the elephant ear and container locks right off the truck.

Reposition the container locks and elephant ears back on the truck at the same height and spacing, but shifted back to the rear of the truck.

The shift distance “X” is equal to the amount the bumper extensions went past the OEM-supplied extension sill “X”.

Add filler material as a spacer to take up the gap created by shifting the locks.

It may be necessary to reconstruct the container lock backing bars to make them have a smaller gap.

Customized pieces of steel are used thoughtout this step and are not provided by Perkins.

Prior to fully welding, make sure a commerical container will properly lock up to the container locks in their new position.

Double check that a commerical container cannot make contact with the lifter. If everything is satisfactory, weld fully.

Note the Bumper Extension fully protects the cart lifter from contact with the commercial container. The elephant ears and container locks have been shifted back and material added. The reverse lights have been relocated in this installation so they would not be obscured by the lifter placement.

Hydraulic Oil

The most important component of any hydraulic system is the oil. Perkins cart lifters use standard seal materials and should therefore be compatible to most grades of hydraulic oils, operating in typical weather conditions for most of North America. However, the condition of the oil is an important consideration that should not be overlooked.

Hydraulic oil may be dirty, contaminated, lost its viscosity, burned up, or have too high a concentration of absorbed water and/or air. While these things are unlikely to cause an immediate performance issue with your cart lifter, these issues can lead to premature wear and tear in the longer term.

Perkins would like to take this opportunity to remind you to check the quality of your hydraulic oil periodically and make sure it meets your standards. Oil that is maintained in good condition will help your equipment last longer.

Non-Perkins Controls

Some customers with new trucks may choose to use hydraulic controls provided by the OEM. As long as the GPM and pressure settings used match the specifications required, then the lifter should operate fine. Perkins cart lifters do not require special Perkins valves to operate.

In other cases, a Perkins cart lifter may be replacing a competitive lifter for which controls are already installed. Again, Perkins cart lifters should work just fine with competitive equipment, as long as the GPM and pressure settings are adjusted within the specified ranges.

Lifter Speed

The cycle time of the lifter is very important for safe operation. Perkins suggests a complete cycle time of 6-8 seconds (3-4 seconds up and 3-4 seconds down). Faster cycle times may be dangerous. Running a lifter too fast can damage the cart, or make a cart break loose off the lifter and fall, resulting in damage and/or injury.

The speed of the cart lifter is determined by the rate of oil (gpm) going to the unit. Typical lifters with a 27k actuator will require approximately 3.5 gpm in order to meet this speed. A gauge is recommended but not needed to determine proper lifter speed. Counting the cycle time using a stop watch is adequate to determine proper flow rate. Running a lifter too fast will void the warranty.

Weight Capacity

The maximum amount of weight that can be lifted is limited by the pressure relief valve. The settings must be determined with a pressure gauge. The D6080-27k requires 1650 psi to lift a 400 lb load. Place a pressure gauge after the hand valve and run the actuator until it stops, continue activating the handle and note the pressure on the gauge. Adjust the relief valve according to the manufacturer's instructions.

Locate the Hand Valve Assembly

A suitable location for the hand valve assembly should be found on the side of the truck. It's placement should not interfere with any existing truck components. The handle should be a comfortable distance from the ground (typically about 48" high) so that repeated ergonomics is easy to use and safe.

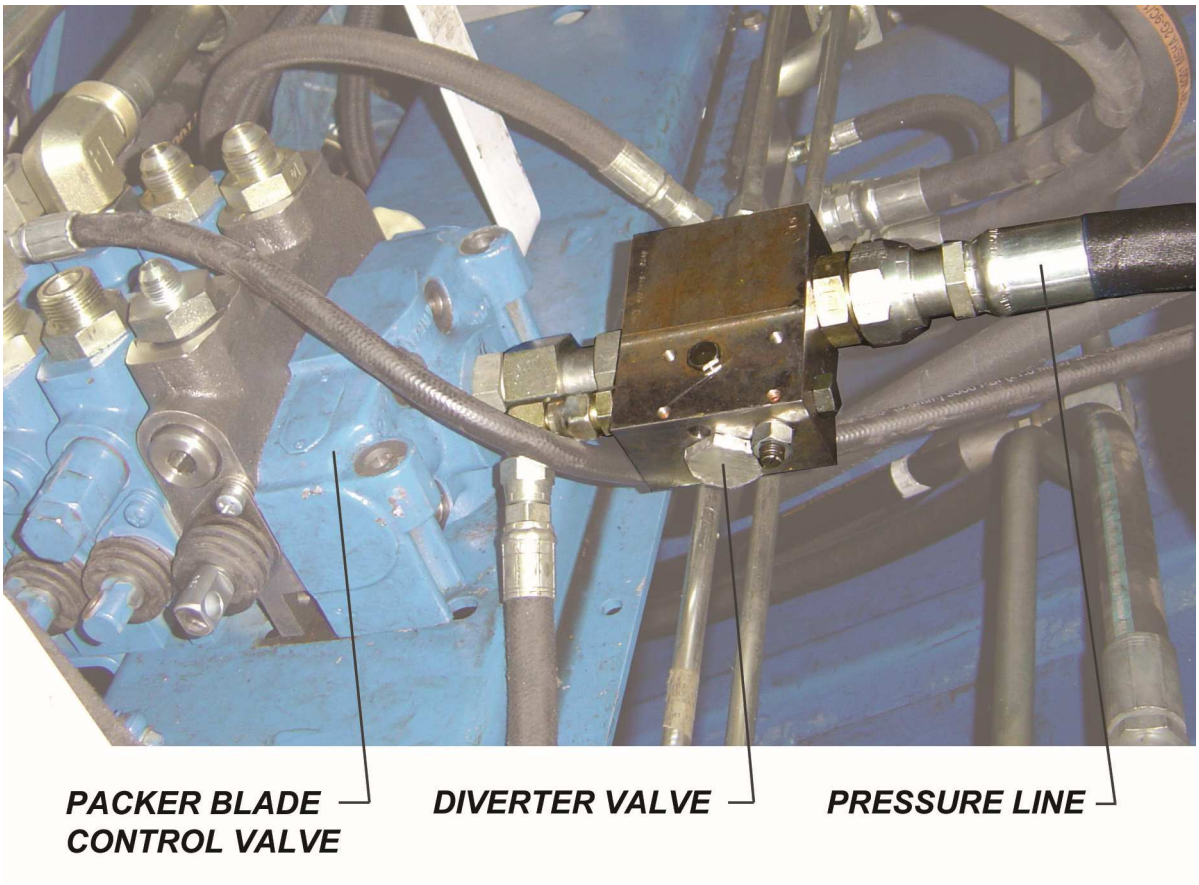
The Perkins hand valve assembly comes with a mounting bracket which may be welded directly to the side of the truck. Typically, the hand valve's handle will point to the back of the truck and the ports A & B which feed the lifter will be pointing to the ground.

This position should allow the operator holding the handle to still be within arm's reach of the cart that is being lifted. This keeps the steps back and forth to a minimum for best efficiency.

Tack-weld the valve bracket in place temporarily until all the hoses have been routed.

Note the hoses feeding the lifter are pointing straight down. The hoses leading back to the pressure supply and tank and pointing towards the front of the truck and all hoses are neatly routed for a clean look and best hose protection.

Locate and Connect the Diverter Valve



The diverter valve is designed to accept full system flow, continuously divert a portion of that flow to the lifter(s), and pass the remaining flow on to the packer control valve. The amount of flow that is diverted is adjustable, so the same valve that feeds one lifter can also be adjusted to feed two lifters.

Adding the Perkins diverter valve to your system will slow down your packer cycle by several seconds, whether you are actively using the lifters or not. However, this is usually an acceptable tradeoff, since the Perkins diverter valve doesn't generate much backpressure or heat, and it allows you to use the packer and the lifters simultaneously.

With the system off and depressurized, find the pressure line that feeds the packer valve and disconnect it. Connect this pressure line to the "IN" port of the Perkins diverter valve. Connect the "OUT" port of the diverter valve back to the packer control valve where the pressure line originally was.

The fittings to do this will vary from truck to truck. The Perkins Tap-in Kit generally gives you the required fittings, but due to the wide variety of trucks, changes made by the OEM, as well as the possibility of other aftermarket parts, especially on used trucks, the fittings you need to make these connections may not be included in your kit and will have to be purchased separately.

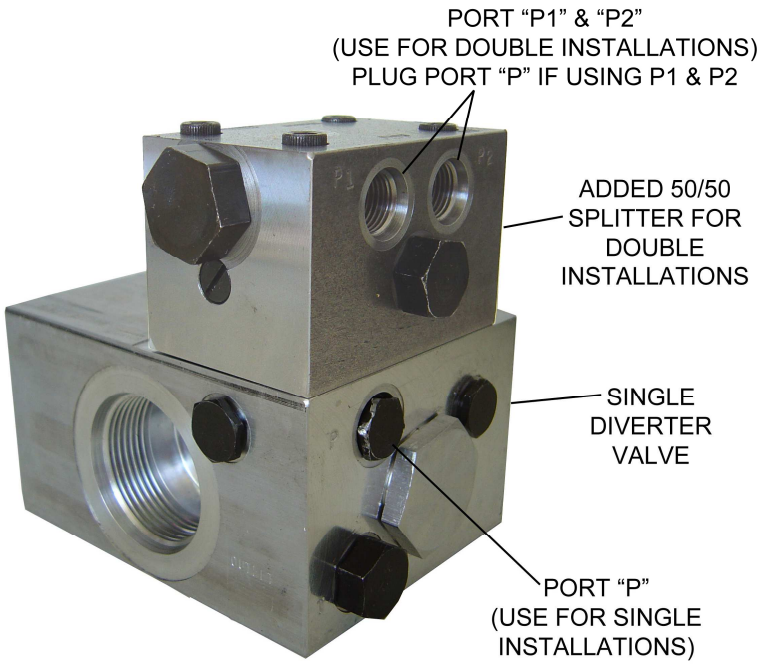
The Perkins Diverter Valve

Ordinarily, the diverter valve's port "P" will feed the lifter.

But, if you have two lifters, then you will use the Perkins Double Diverter Valve.

It's the same valve, except port "P" is plugged, and a 50/50 splitter valve is mounted on top.

In this case, ports "P1" and "P2" will feed the lifters an equal amount of flow each.



Making the Hose Connections

All the primary valves are now in place for a typical installation.

The tap-in kit would have come with 2 short hoses and 2 long hoses (single installation) or 4 short and 4 long for double installation.

Connect one short hose from the lifter's left side to the hand valve port "A".

Connect another short hose from the lifter's right side to hand valve port "B".

Note: If the handle's operation is not as desired, you may switch the hoses to reverse the handle's operation

Connect one long hose from the hand valve's "IN" port to the diverter valve's "P" port. (or if performing a dual installation, to port "P1" or "P2")

Connect the last long hose from the hand valve's "OUT" port to a tank line. *

Note: See photo of tank line connection on following page for more details.

Make sure all the hoses have been routed neatly. The hoses must be protected from rubbing or pinching.

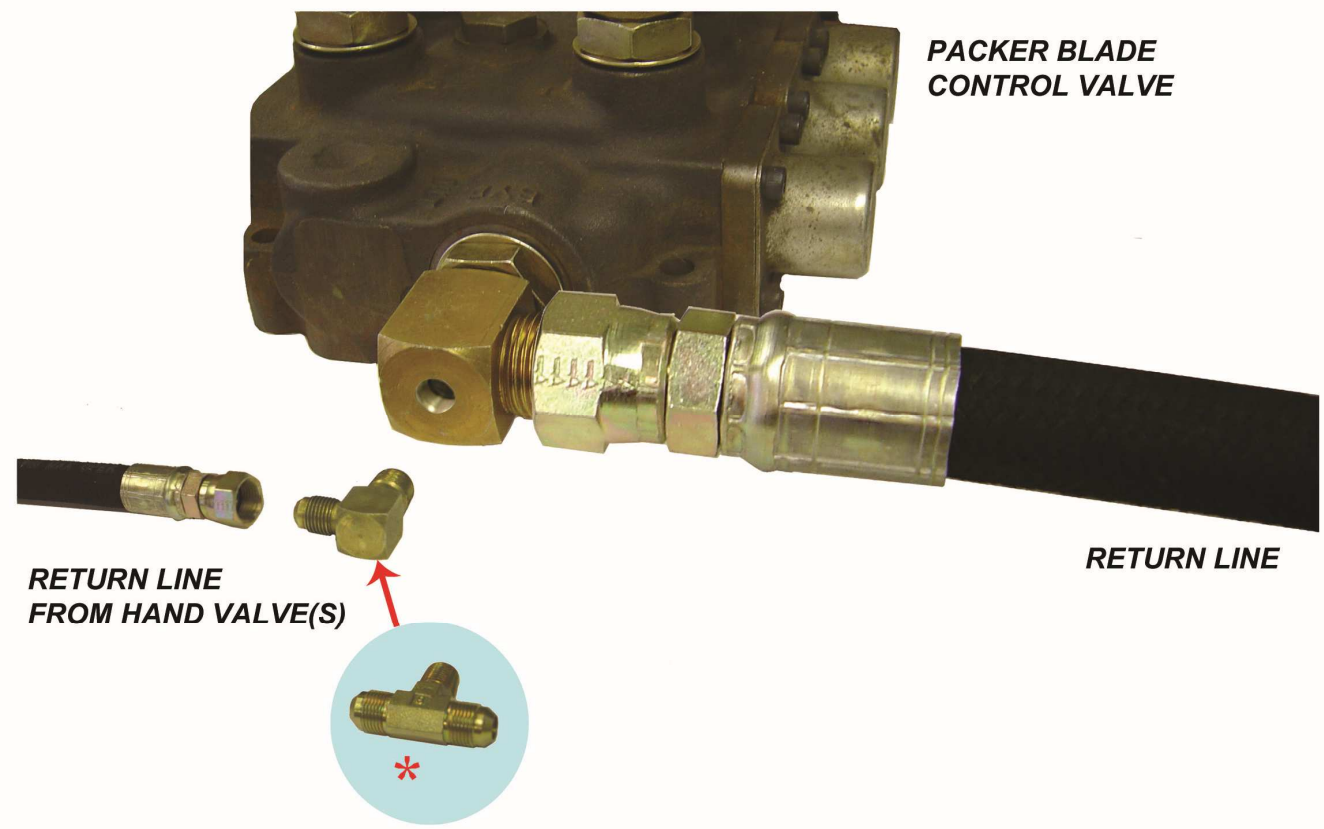
If performing a double installation, repeat this process for the second lifter.

Tapping into the Tank Line

There are two ways to run the oil back to tank. Perkins does not suggest allowing the return oil to get pushed back into the packer control valve, because this generates back pressure and heat.

Recommended Method: Locate the return line coming off the packer control valve and find a suitable large fitting as shown in the photo below. Remove this fitting and drill and tap into it to fit an adapter (or tee for a double installation) to allow the oil to flow back into the return line.

Be sure to clean the fitting of metal shavings before returning it to the system.



Alternative Method: On some trucks, it is not possible to tap into a return line fitting. It some instances, everything is hard-piped and there are no fittings to tap into. If this is the case, the return lines may be feed into the "T" port of the Perkins Diverter Valve. This tends to create some backpressure in the system, but otherwise does work.

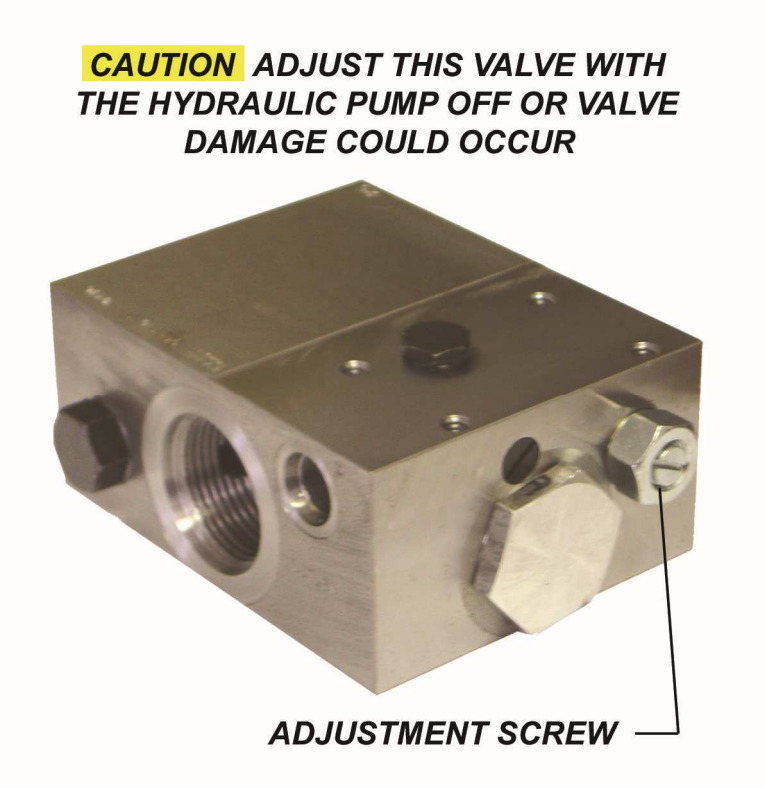
Adjusting the Speed

Single Diverter: D63237s
Double Diverter: D63411s

This valve's adjustment controls the flow going to the lifter. The flow controls the speed of the lifter.

A typical 27k rotary lifter requires 3.5 gpm to achieve a 6-8 second cycle time.

To adjust, turn off the system and loosen the locking nut. Turn the adjustment screw clockwise all the way in. This will stop flow to the lifter completely. From this position, make counter-clockwise adjustments ½ turn at a time. When the correct position is found, tighten the locking nut to hold the adjustment in place.



Replacement Parts:
D63477 – Seal Kit
D63565 – Adjustment Screw

To convert a Single Diverter to a Double:
D63236 – 50/50 Splitter (comes with mounting hardware).

Troubleshooting the Diverter Valve

This diverter valve does not affect lifting power / weight capacity!

Only check this valve if your lifter stops moving, or moves to fast or too slow.

Maintaining the Diverter Valve

The valve requires no periodic maintenance.

If a problem is thought to exist in the diverter valve, turn the system off and check the cartridge by unscrewing either of the large caps from the ends and removing the cartridge. The cartridge may then be cleaned and inspected. Flush the valve out to remove any contaminants, return the cartridge and reinstall.

Adjusting the Lifting Capacity

2-spool Hand Valve: D63519 *valve only

This valve directs the flow to the lifter to make it move up or down. It features a "deadman" stop. Release the handle and the lifter should stop moving.

The valve has a built-in pressure relief valve. To increase the lifting capacity, loosen the locking nut and turn the adjusting screw clockwise. It is recommended to use a pressure gauge to achieve the right setting. Raise the lifter until it stops and continue to pull the handle. Note the pressure on the gauge and adjust the screw accordingly.

When the pressure is correct, retighten the locking nut.

Note: The setting for the D6120-40-27k is approximately 2000 psi to lift 400 lbs.

Replacement Parts:
D63127 – Seal Kit
D63192 – Spring Kit
D63672 – Cartridge Kit

Troubleshooting the Hand Valve

This valve does not affect lifter speed!

Only adjust this valve if the lifter won't pick-up the desired weight, or if a chattering noise is heard.

Don't be fooled! Containers full of water, concrete, rocks, dirt, wet grass of other materials can easily weigh far more than the capacity of the lifter. Just because the lifter doesn't pick up that heavy cart, doesn't mean the lifter needs adjustment! If there is doubt, try weighing the container in question.

Maintaining the Hand Valve

This valve requires no periodic maintenance.

If a problem is traced to the hand valve, turn the system off and remove the cartridge. Clean and inspect the cartridge. Make sure the handle returns to center on it's own. If it doesn't, it may need a spring kit.

There are usually multiple relief valves within the same system. They must be set at least 100 psi apart from each other or they will “chatter”. Adjusting one valve to be set differently than another should eliminate the problem. Example: Pump relief valve 2000 psi, packer relief valve 1900 psi, lifter relief valve 1650 psi.

Maintaining the PO Check Valve

PO Check Valve: D63580

The valve locks the oil from escaping unless the hand control is activated. This locks equipment in position and prevents drifting when equipment is idle. It also acts as a safety, in the event of a broken hose, the valve stops the movement of the equipment.

This valve is not adjustable.

This valve requires no periodic maintenance.

If a problem is traced back to the PO check, turn off the system and remove the cartridge. Clean and inspect for damage. Replace cartridge if needed, flush the valve, rebuild and install.

Maintaining the Adjustable Flow Control

Adjustable Flow Control Valve: D63575

The valve is located on the left-hand side port of the rotary actuator. It’s purpose is to restrict oil coming out of the actuator when the lifter is moving back down. By restricting the oil, the lifter is prevented from “getting ahead” of the oil and slamming into the ground.

This valve only works in one direction, so adjusting it does not affect the speed of the upwards direction.

The valve has a small arrow stamped into its body. The arrow should point away from the actuator.

If the lifter comes down too quickly, try turning this valve in clockwise ¼ turn at a time until the down direction is smooth and under control.

Servicing the Perkins Helical Rotary Actuator

Perkins Helical 27k Actuator: D73060

Common Parts: Seal Kit: D73061-1 Shaft: D73060-2

The manual for the actuator is provided separately and free of charge. It contains detailed instructions for rebuilding, based on a complete tear-down. Also within the manual is a complete parts listing. To receive a copy of the actuator manual, simply call Perkins at 800-882-5292.

Flushing the Actuator

Because the oil displacement of the actuator is nearly equal to the displacement of the hoses, the oil inside the actuator does not fully dispel to the system and get filtered with each use. Only a percentage of the oil dispels. Because of this, it is possible to have build-up of particles over time which can lead to premature wear, especially in dirty oil conditions. Perkins recommends flushing the oil in the actuator to the system to allow for complete filtration once every 6 months. This will help ensure the actuator has a very long lifespan.

To flush the oil, turn off / depressurize the system and connect a hose from one bleed port to the other. Tighten the fittings restart the pump. Run the hand valve back and forth several times, holding the handle down for about a minute each time. This ensures any particles have completely exited the actuator.

Flush the Debris from the Shaft Seal Area

The actuator does not need greasing, as it is self-lubricated naturally from the internal hydraulic oil.

Nonetheless, grease zerks are provided on the ends of the actuator. These grease paths allow grease to come down and escape from the shaft seal area, flushing debris away from the shaft seal.

The purpose of this is to improve the life of the seal as well as aid in keeping the shaft greased for easy removal during servicing.

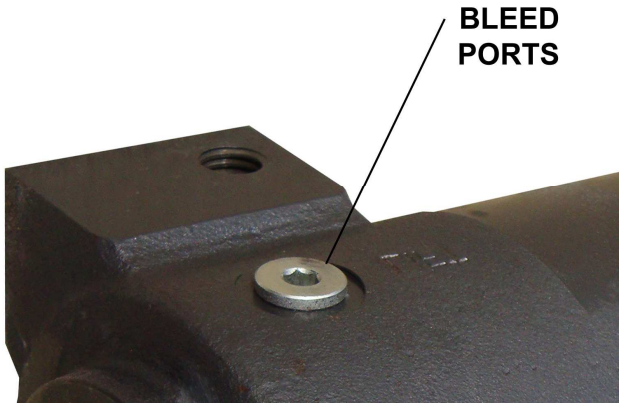
Perkins recommends greasing these points once every 6 months or as necessary for your environmental conditions.

Bleeding air from the Actuator

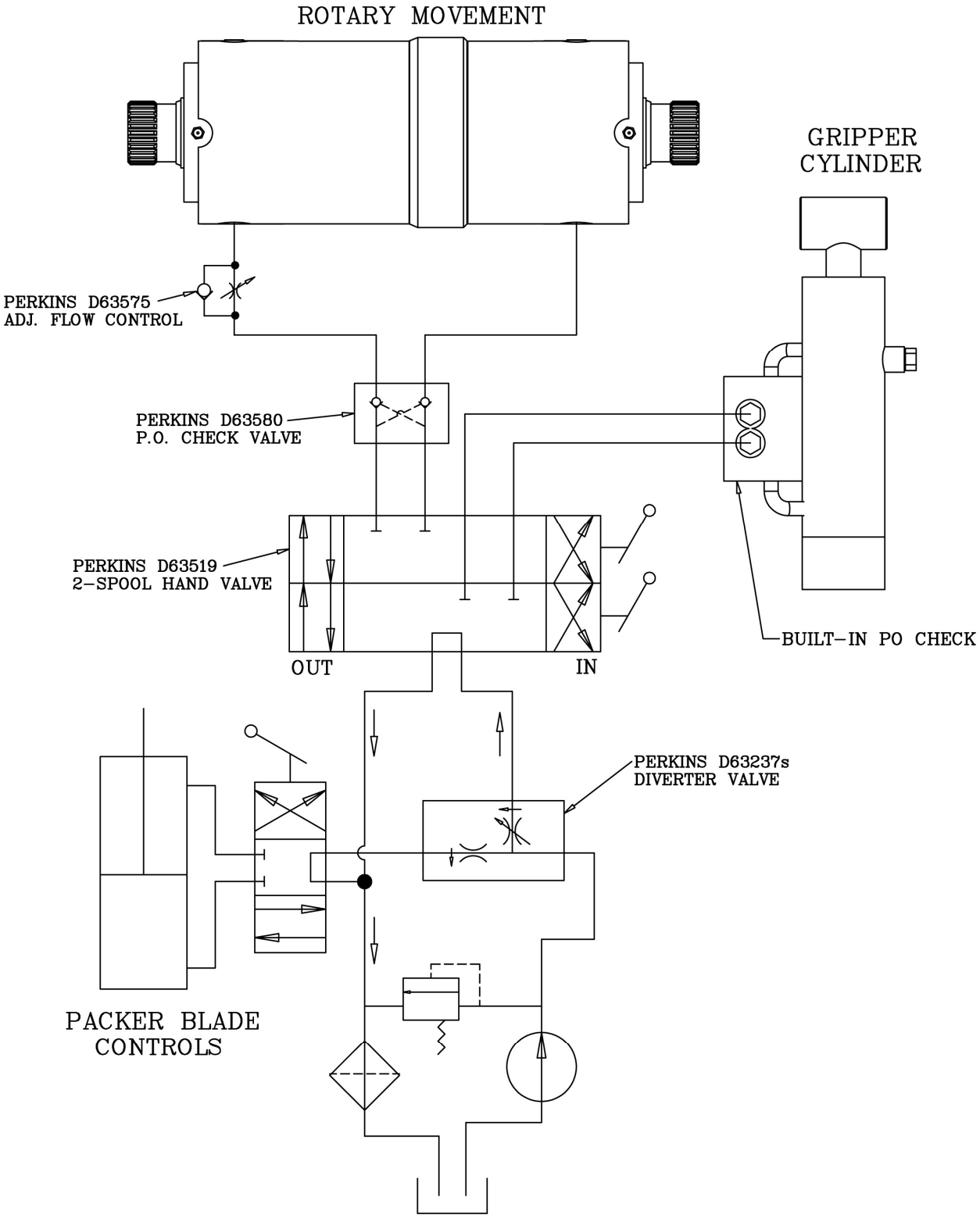
Air does not usually get trapped inside the actuator, but it does happen on occasion, particularly with initial installations. For this reason, the actuator has #4 bleed ports located atop it. Cracking the plug loose slightly will allow trapped air to escape.

Perkins recommends this be performed only as necessary. Lifter motion that is very erratic is usually a sign of trapped air. The lifter should be run several times up and down first, as this usually clears any trapped air without having to use the bleed ports.

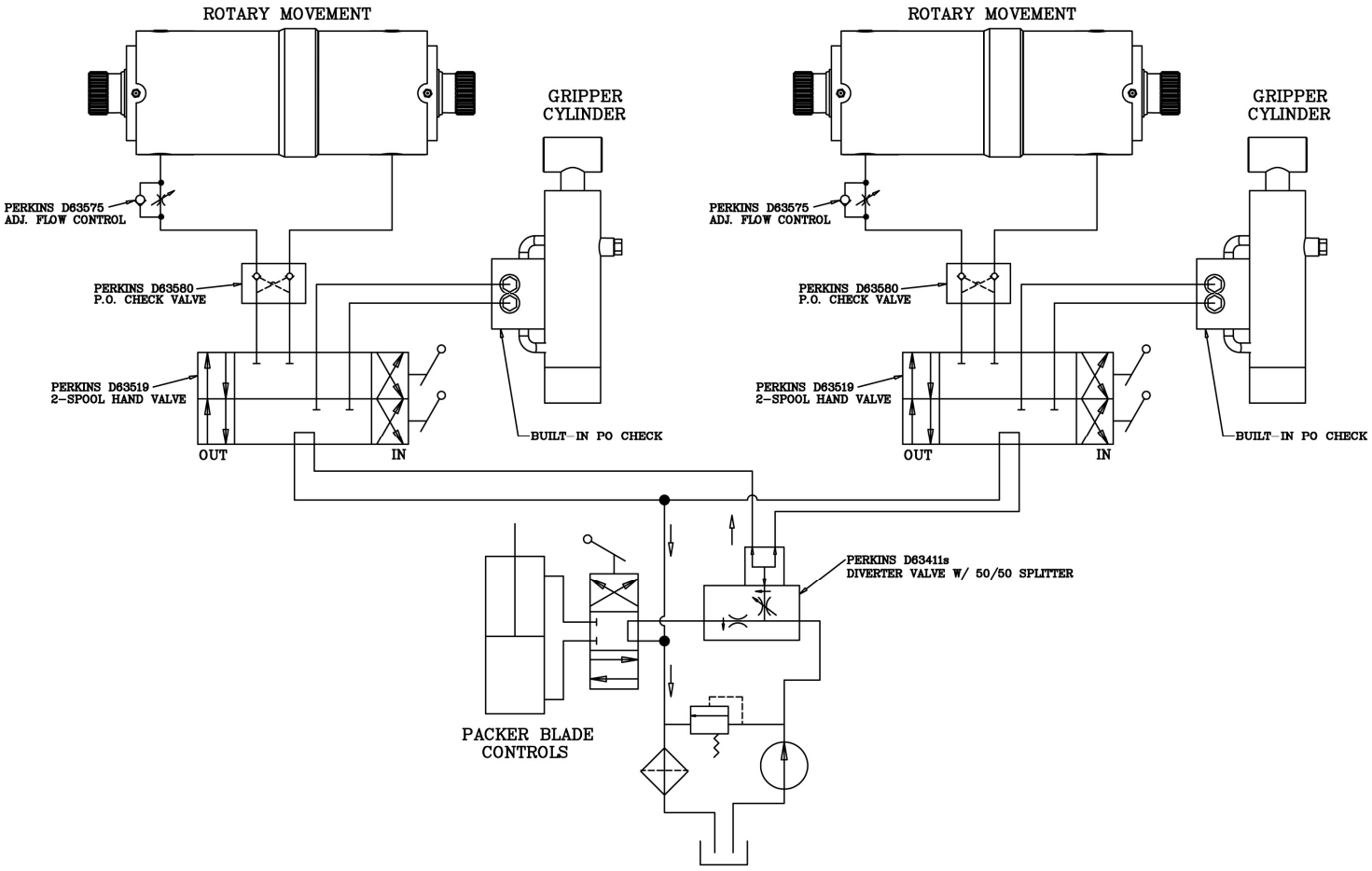
Make sure the bleed ports are fully tightened when complete.



Perkins Single Lifter Hydraulics Schematic



Perkins Double Lifter Hydraulics Schematic



Operating Instructions

The recommended cycle is 3-4 seconds to travel up and 3-4 seconds to travel down. This cycle time is based on the safe and smooth movement that the plastic cart can be swung about at without risking damage to the cart or injury to the operator. Therefore, operating the lifter faster than this time will void the warranty.

> **It is recommended that the lifter be visually inspected on a daily basis to ensure that there is nothing obviously in need of repair. Broken or missing parts/hardware should be attended to immediately to avoid risk of further damage to the lifter, damage to the cart, or injury to the operator. Operating a cart lifter that is not properly maintained is hazardous.**

Step 1: Bring the TuckAway lifter out of the storage position and into the pick-up position by pulling up on the hand valve handle until the faceplate is just shy of vertical, to facilitate easy cart engagement.

Step 2: Roll a loaded cart to the lifter and position the upper bar of the cart on the upper saddle of the lifter or in a position where the lifter will engage the bar once it starts it's motion. (It is not necessary to lift the cart onto the upper saddle)

Step 3: Look and make sure no one is in the area of the lifter or cart, then operate the hand valve by pulling up on the handle. The lifter will rotate and engage the cart and raise it to 45 degrees above the horizon.

> Safety Note: The hand valve operates like a deadman switch. Releasing the handle at any time will stop motion of the lifter. Normal operation may be resumed by operating the handle again.

Step 4: At the operator preference, the cart may be "shook" back and forth to help discharge the contents of the cart by moving the hand valve back and forth rapidly. Shaking the cart is not harmful to the lifter, however, cart damage can result if the lifter speed is too great. Make sure the speed adjustment of the lifter is set slow enough to allow for safe cart shaking, if you plan to regularly shake the cart.

Step 5: Lower the cart by reversing the hand valve handle (pushing down), until the cart is safely returned to the ground and the lifter has disengaged the cart.

Step 6: Remove the empty cart and repeat the process as needed.

Safe Operating Tips

Always follow your company's safety policy during the use of this lifter, including use of proper clothing/ personal protective gear, reflective clothing, etc. Remember, you are operating the lifter on a public road/alley among moving traffic. Always be aware of your surroundings and watch for cars and pedestrians.

Do not lift anything with the lifter other than ANSI approved carts which are in good condition. Non-approved carts may not lock properly, causing them to fall from the lifter, which can cause damage or injury and will void the warranty.

Do not use the lifter for any purpose other than lifting a cart. Lifters are not meant as steps, they are not to be used to help lift a commercial container, or used to crush/breakdown an item. Doing so can cause serious damage or injury and will void the warranty.

Speeding up the lifter beyond the recommended cycle time of 6-8 seconds and/or adjusting the relief valve to pick up weights heavier than 400 lbs can lead to damage or injury and will void the warranty.

Do not operate the lifter unless the area around it is clear of personnel. This means do not touch the lifter while it is in operation and do not stand or sit under/near the lifter while it is moving. Lifters have pinch points which can cause serious injury. Stay clear at all times.

TuckAway lifters can hang very low to the ground at certain points of their lift cycle. It is the operator's responsibility to move the lifter to a safe position while going down the road, such as putting the lifter all the way up or fully into the storage position. Lifters left hanging low risk bottoming out on the street, which will cause serious lifter damage. Damage caused by bottoming out is not covered by warranty.

Lifters of all kinds can be struck by utility poles, walls, other vehicles, backed into earthen hills, etc. It is the operator's responsibility to position the cart lifter in a safe position prior to coming close to any other foreign object. If the lifter is damaged by collision, the damage will not be covered by warranty.

If the lifter is installed in such a way that the lifter or cart can make contact with the packer blade, then it is critical to pay attention and make sure the lifter is not operated when the packer blade is down or coming down.

If the truck is equipped to dump commercial containers, the lifter must be stored all the way down prior to engaging the commercial container or the cart lifter may be crushed by the container. This damage is not covered by warranty.

Other Adjustments

Make sure all hardware is firmly tightened. If any hardware loosens they may be affixed with Blue Loctite type 242 thread locker.

Perkins uses anti-sieze lubrication on the shafts of the actuator when applying the driver bearing hubs. This typically does not wash away and helps in reducing corrosion. This makes removing the driver bearing hubs off the splines easier in the future. When rebuilding a lifter, reapply a fresh coating of anti-sieze on the splines.

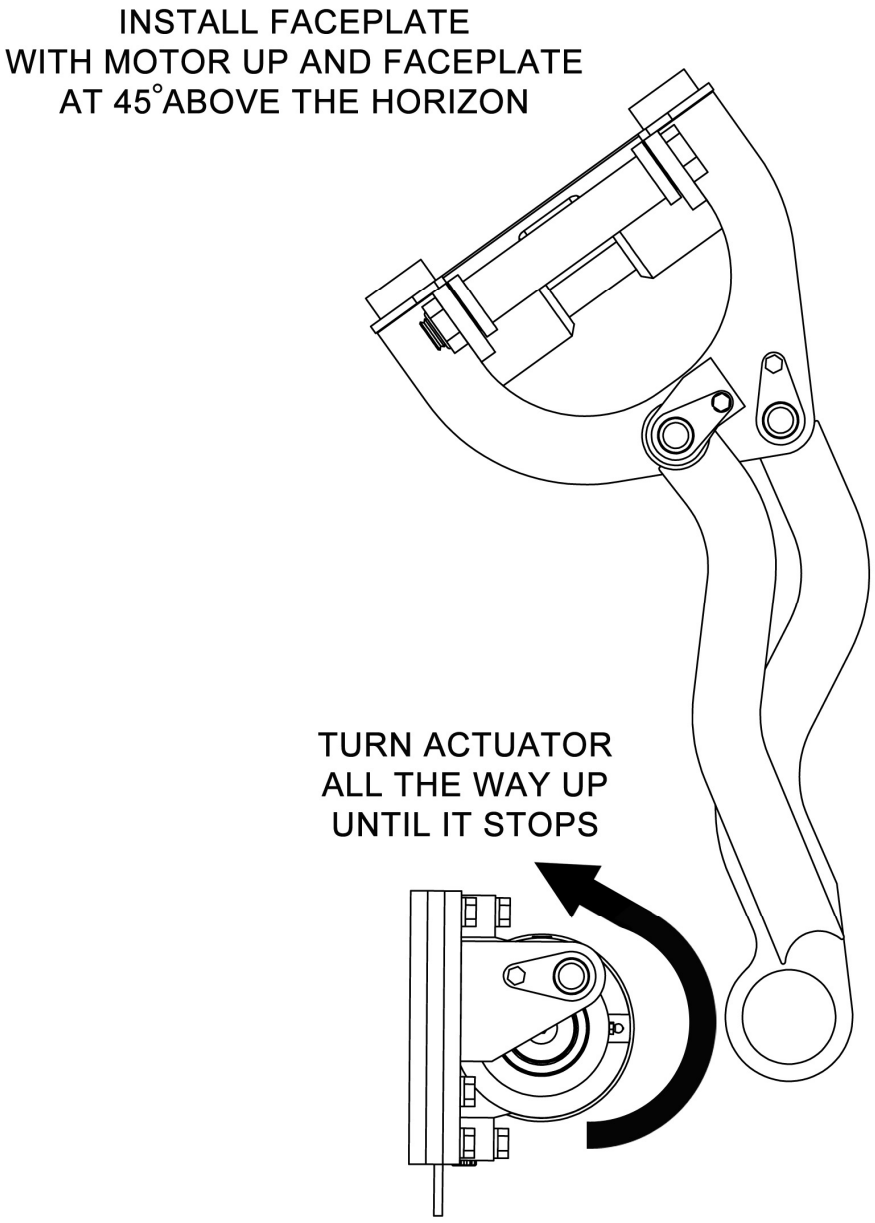
There is a wide variety of carts, some of which do not meet ANSI standards. Customers may experience engagement issues with some particular brands of carts and in circumstances like these, spacers can be added behind the upper saddle or behind the lower stop to extend them out from the faceplate. This helps certain brands/sizes of carts to lock to the lifter better. If you experience any difficulties with the cart type you have, please call Perkins at 800-882-5292 to discuss the problem and Perkins will advise the best solution to meet your needs.

Reassembling the Faceplate to the Actuator

After a major tear-down, reassembling the lifter can be made simple when you remember to make matching marks on the teeth and driver hubs.

However, if this is forgotten, the correct position can be discovered by this method below. Rotate the actuator to the fully up position as shown in the diagram. Install the faceplate assembly so that the face is 45 degrees above the horizon.

Each tooth offers separation of 12.8 degrees, so if you use the wrong tooth, it should be readily obvious and easily correctible.



Lifter operation is erratic, lifter does not move smoothly

When the lifter does not move smoothly, there is typically air in the system. This is usually an issue after the initial installation or a recent repair where the hydraulic lines may have been opened. Bleed air out of the system by loosening a fitting very slightly and running the hand valve to create flow. Excess air should bleed out of the opening in the fitting. Retighten when complete done.

In rare instances, the flow may be too low. This would also be noticeable if the lifter was also very slow. Try adjusting the diverter valve to increase the flow.

Another possibility is the adjustable flow control, D63575 not functioning properly. Check the arrow printed on the valve body. The valve should be installed so the arrow points away from the actuator. Adjust, clean, or replace the adjustable flow control valve as needed.

Cart lifter will not pick up the weight

The cart may be overweight. If the cart is obviously very heavy and hard to move, try removing a few items from the top to lighten the load.

The hand valve relief pressure setting may be set too low. Check and adjust the pressure using a pressure gage. Note the pressure being delivered and adjust accordingly.

If adjusting the hand valve's relief does not bring the pressure up to where it should be, then the truck's relief pressure setting may be set too low. Try adjusting the truck's relief valve (see manufacturer's instructions on how to do this for your vehicle)

In cases of older equipment, the hand valve may be in need of replacement or repair.

If all pressures are set properly and the hand valve works, then the actuator may have internal leakage. Test for internal leakage by running the lifter all the way up and dead-head the lifter up. Note the pressure gage and see that the pressure stays constant as the hand valve is held depressed. If the pressure falls, you may have internal leakage and the actuator should be repaired/rebuilt with new seals.

Lifter operates slowly

Check the flow adjustment on the diverter valve. Use a flow meter to make sure each lifter receives approximately 3.5 gpm. Adjust diverter as needed following instructions in the manual.

Engine idle may be too low to provide adequate flow. Following the manufacturer's instructions, adjust the engine idle. Remember increasing engine idle will increase fuel consumption.

The hand valve may be faulty. Check, clean and/or replace as needed.

The truck's pump may be faulty, unable to deliver the desired flow. Contact your truck manufacturer.

In rare instances, debris within the oil may be clogging the diverter valve. Check and clean the valve as needed.

Lifter operates too fast

Check diverter valve adjustment screw. Adjust in to lower the flow delivered to the lifters.

Engine idle speed may be too high. Adjust per the manufacturer instructions.

Diverter valve is leaking oil

Worn or Damaged seals within the diverter will cause external leaking. Rebuild the valve using D63477 divert valve spring kit.

Hand valve lever sticks, does not return to center

A worn or broken spring on the spool will cause the handle to fail to return to center. This is dangerous, since this means the deadman stop feature is not working. Check and replace the spring with part number D63192.

If the spring is not the problem, check and clean the hand valve of any rust/corrosion and debris in or around the spool or the external parts.

On new installations, this is the result of having the pressure and tank lines reversed. Check and make sure that the pressure line goes to the "IN" port and the tank line goes to the "OUT" port.

Hand valve is leaking oil

This is typically caused by worn or damaged seals. Install new seals with part number D63217

In some cases, the spool itself is worn. If so, replace the hand valve.

Unable to achieve 1950 psi at the hand valve

The truck's pressure setting may be too low. Adjust the truck pressure according to the manufacturer's instructions.

If pressure cannot be increased further, it may be necessary to install a speed up switch which will rev the engine higher during peak need to deliver the desired pressure. Note that speed up switches will increase fuel consumption.

Unable to achieve over 1400 psi

The truck pressure is too low. If adjustments do not help, the pump may be bad or underpowered. Contact your truck manufacturer.

Lifter breaks the lower bars of carts

First, make sure there is no damage to the lifter. Replace damaged components as needed.

Check adjustment of plunger assembly and threaded rod assembly. Check function of plunger. Adjust as needed.

On new installations, check the mounting height. It is common for brand new lifters to break lower bars if the lifter is installed too low. Remove the lifter and remount at the correct height.

Lifter breaks upper bar of carts

The upper bar of the cart is typically broken when the cart is lifted while it is excessively loaded, or while the lifter is operated too quickly. Adjust the speed of the lifter to bring the cycle time to 6-8 seconds. Make sure the pressure is set no higher than 1950 psi.

Make sure the lifter is not damaged. Bent or broken lifter parts can contribute to cart damage.

Lifter drops carts

A common problem is the lower latch is not adjusted correctly or the latch is damaged or unable to move freely. Check, clean and grease the parts as necessary to achieve free motion of the latch and appropriate latch timing.

Make sure the upper hook is not damaged and make sure the lower stop is in place. Some customers have been known to remove the lower stop, but this leads to dropping carts and latch damage.

Carts which are damaged or have missing lower bars will obviously not latch properly and should be repaired or replaced.

Some carts do not meet ANSI standards. Measure the problem cart and see that the bar to bar spacing is within 14 ½ - 15 ¼.

Lifter slams down to the ground or comes down too quickly

On the way down, the lifter can get ahead of the oil and free fall. Check that the adjustable flow control is mounted to the left side of the actuator, with the arrow pointed away from the actuator, and that the valve is adjusted properly. Try ¼ turn adjustments until the lifter returns to ground level smoothly.

Lifter drifts out of position when not in use

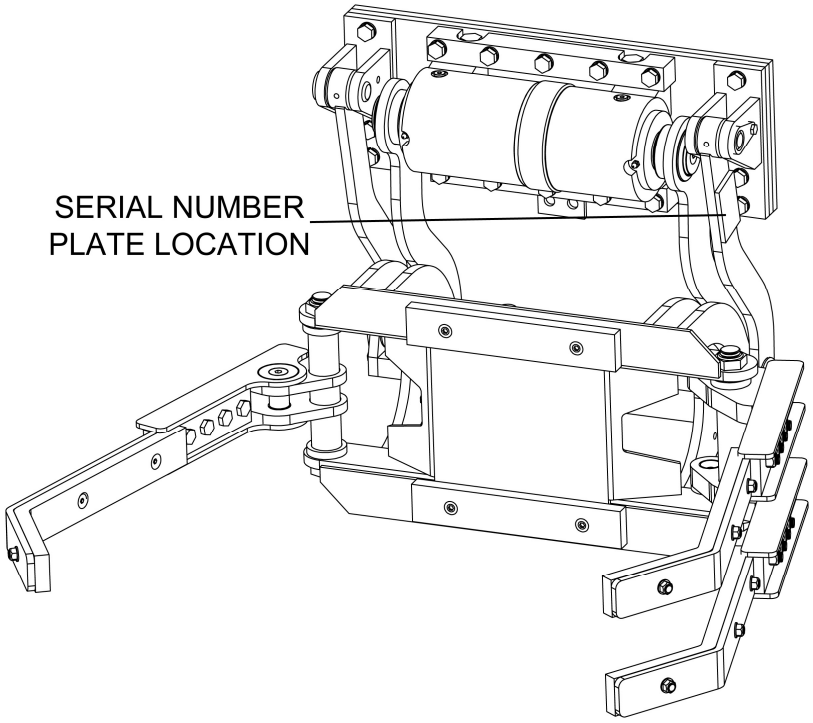
Make sure the PO Check valve is installed. If it is and the lifter still drifts, remove the PO check and remove and clean the cartridge. If the valve is damaged, replace it.

If the problem does not seem to be the PO check, the hand valve may have internal leakage. Replace the hand valve seals and/or spool as needed.

If the problem persists, then the actuator may be leaking internally. Check for internal leakage by running the lifter up and holding the hand valve while reading a pressure gage. If the pressure falls, then the actuator is leaking internally and should be rebuilt with a new seal kit.

Lifter is in good condition, latch is adjusted, but lifter still breaks carts

In this case, the lifter is most likely being operated too fast, or the carts are overweight. Excessively hard shaking of the carts by the operators can also lead to cart damage. Train your operators to operate the lifters properly.



For complete warranty coverage details, please see the warranty page at the end of this manual.

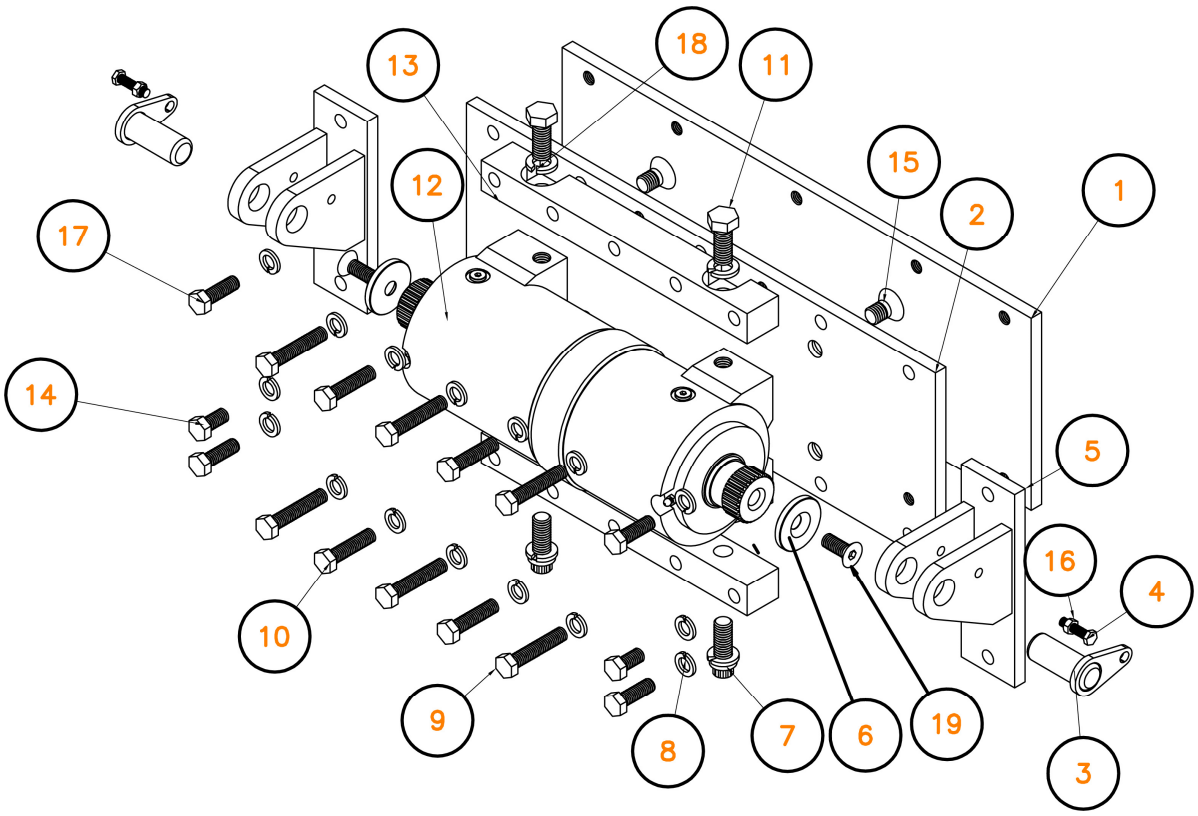
If you suspect that failure of the lifter to operate is due to a defect, please take a moment to locate the serial number of your lifter.

Warranty cannot be honored on lifters or individual pieces unless a serial number is provided. Since the tag is frequently lost, damaged, or painted over, it is a good idea to note the serial number in this manual at the time of installation.

At right is an example of the serial number plate. It will be stamped with a model number and serial number.

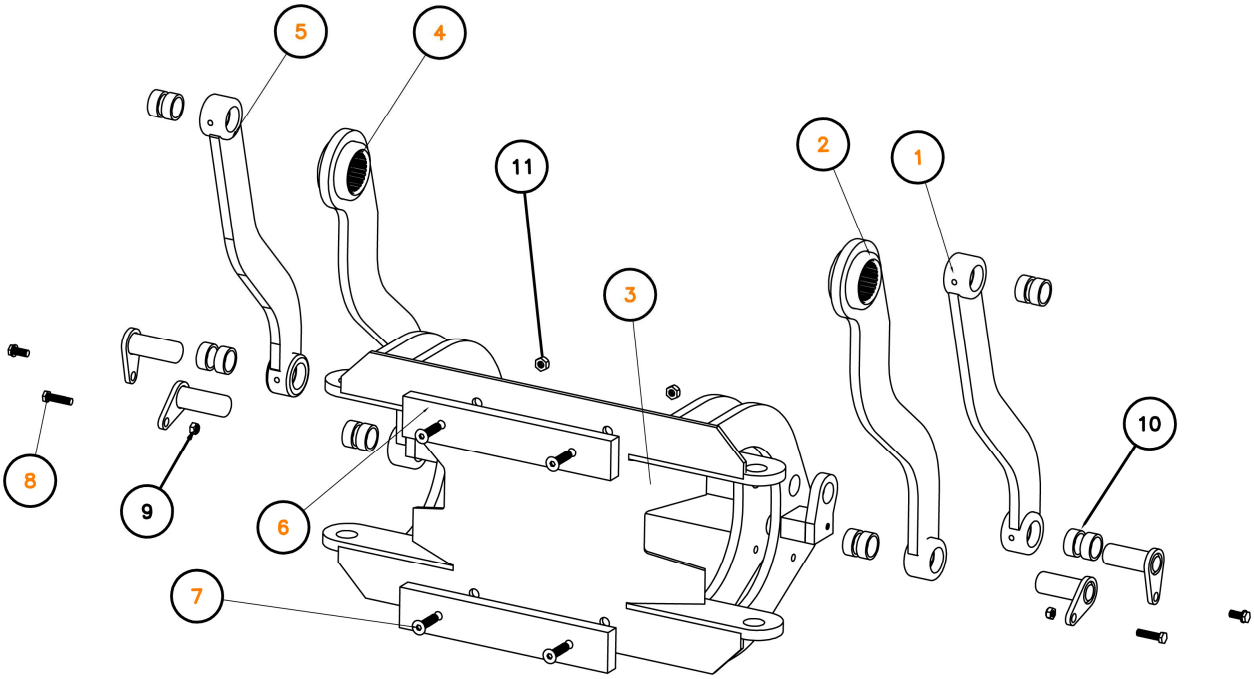
Once you have the number, please call Perkins Manufacturing at 800-882-5292 for additional instructions.

Exploded Parts View – Base/Actuator Portion



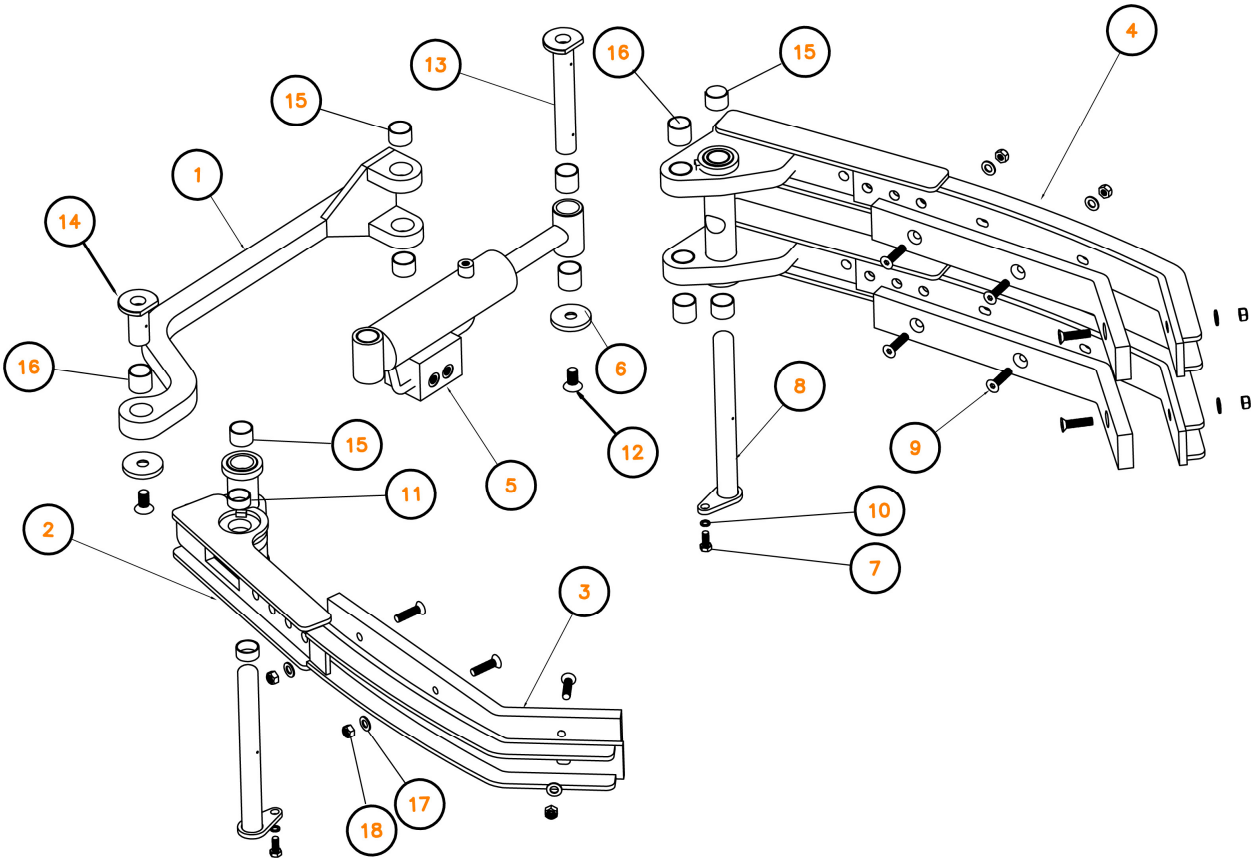
1	D69404	Rear Mounting Plate	1
2	D69660	Front Mounting Weldment	1
3	D69434	Pivot Pin Weldment	2
4	D62468	Bolt FHCS 5/16”-18 x 1 ¼” Zinc Plate	2
5	D69634	Idler Lug Weldment	2
6	D63238	20k-27k-Hub	2
7	D72219	12 pt Flange Bolt 5/8”-11 x 1.5	2
8	D62105	Split Lock Washer 1/2” Zinc Plate	16
9	D72042	Bolt HHCS ½”-13 x 2 ½” GR8	6
10	D62405	Bolt HHCS ½”-13 x 2” GR8	4
11	D62410	Botl HHCS 5/8”-11 x 1 ½” GR8	2
12	D73060	27k Helical Actuator	1
13	D44002	Actuator Bar Rev	2
14	D77159	Bolt HHCS ½-13 x 1	2
15	D72019	Bolt FHCS 5/8”-11 x 1 ¼” Zinc Plate	4
16	D62030	Locknut 5/16”-18 GR8 Plate	2
17	CC3300	Bolt HHCS ½-13 x 1 1/2	4
18	D62458	Split Lockwasher 5/8	2
19	D62006	Bolt FHCS ½-13 x 1 1/4	2

Exploded Parts View – Lifter Portion



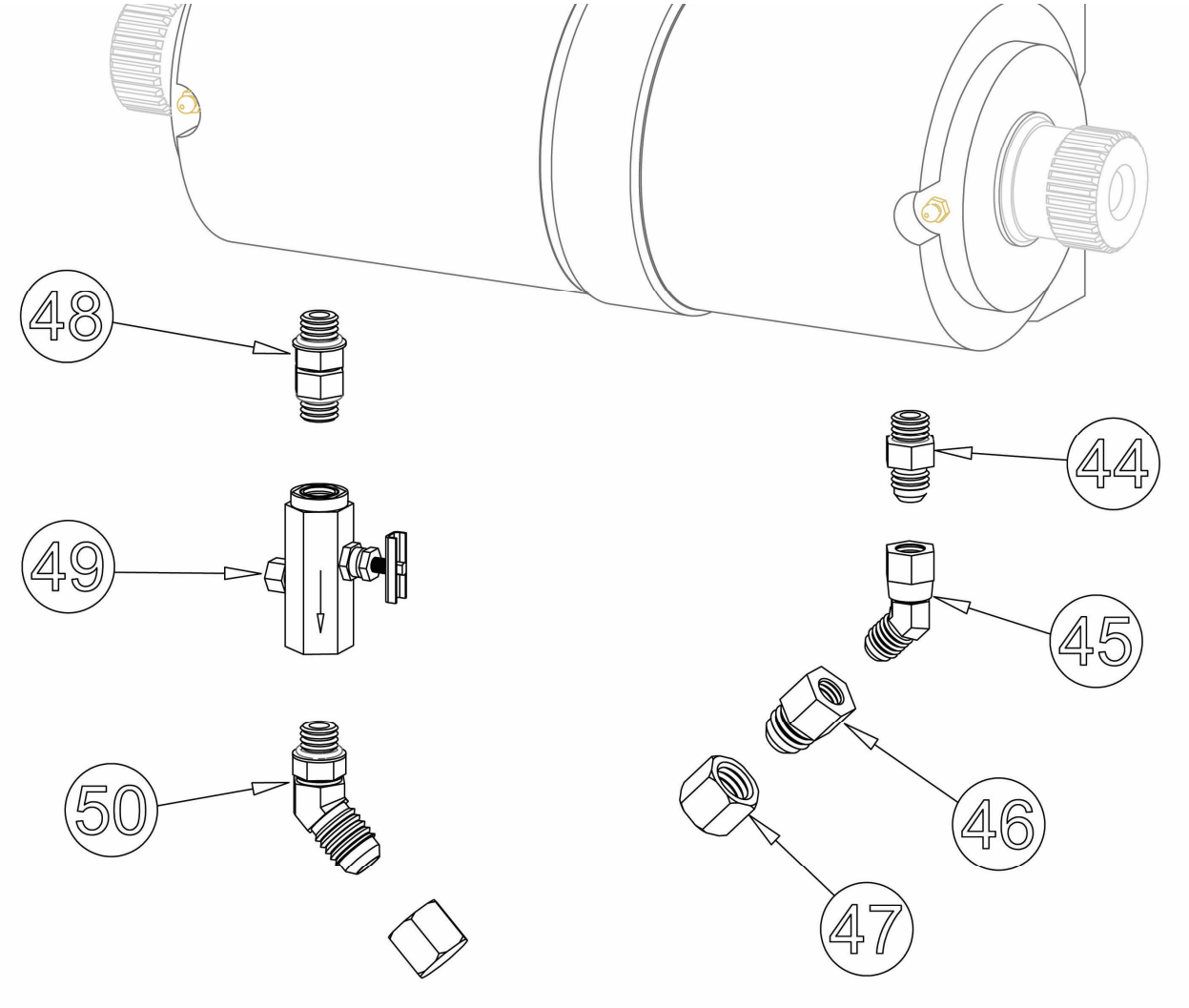
1	D69633	RH Idler Arm Weldment	1
2	D69631	RH Driver Arm Weldment	1
3	D69635	Faceplate Weldment	1
4	D69630	LH Driver Arm Weldment	1
5	D69632	LH Idler Arm Weldment	1
6	D69567	Center Rubber Strip	2
7	D62420	Bolt FHCS 3/8”-16 x 1½” GR8 Zinc Plate	4
8	D62468	Bolt FHCS 5/16”-18 x 1¼” Zinc Plate	2
9	D62081	Locknut ½”-13 GR8 Zinc Plate	2
10	D72108	1” dia. Self-lubricated bushing *Part of arm assemblies	12
11	D62080	3/8-16 locknut	4

Grabber Arms View – Latch Portion

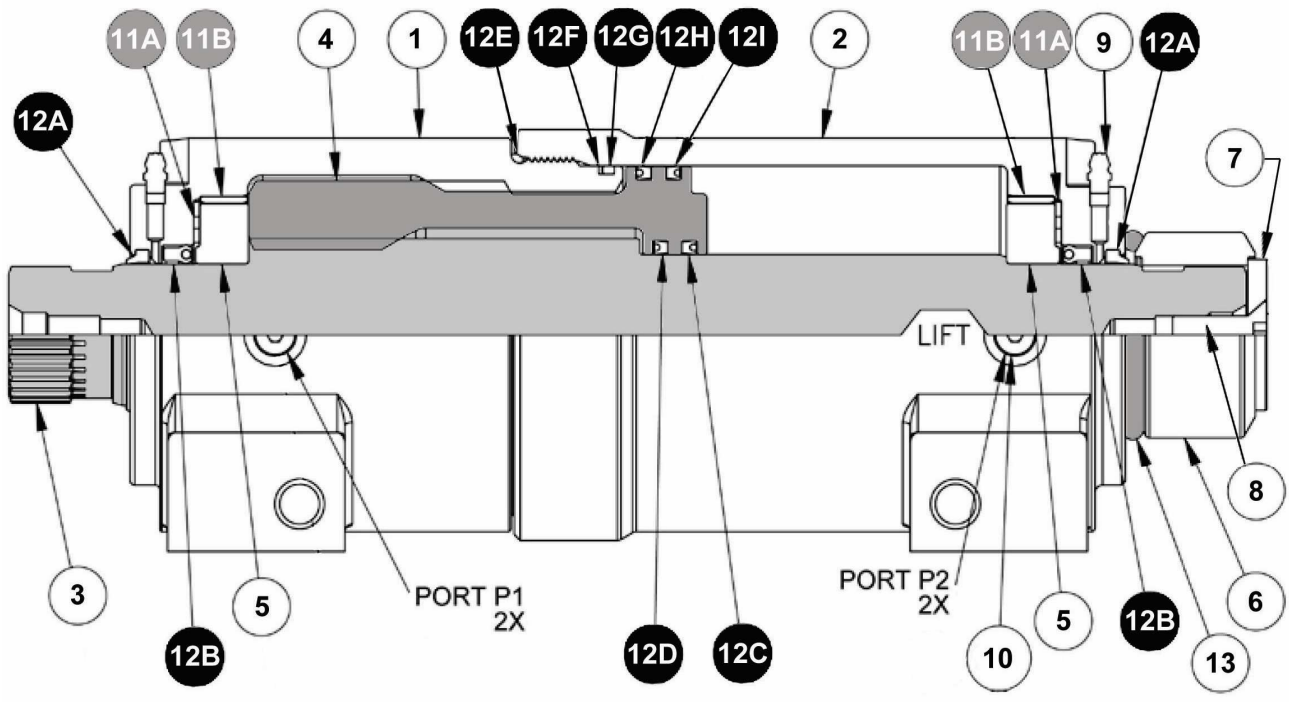


1	D69585	Linkage Arm Weldment	1
2	D69637	LH Grabber Arm Weldment	1
3	D69639	Rubber Pad	3
4	D69636	RH Gripper Arm Weldment	3
5	D69575	Cylinder- Modified CC52099	1
6	D73008	Actuator Flange 515583	4
7	D62113	HHCS Bolt 5/16-18 x 3/4	2
8	D69686	Pivot Pin	2
9	D62420	Bolt FHCS 3/8”-16 x 1 1/2” Gr. 8 Zinc Plated	9
10	D62053	5/16 Split Lockwasher	2
11	D72216	Self-Lubricated Bushing x 1/2	8
12	D72082	Bolt 1/2”-13 x 1”	2
13	D69683	Long Pin	1
14	D69682	Short Pin	1
15	D69565	Self-Lubricated Bushing x 3/4	2
16	D72226	Self-Lubricated Bushing x 1	1
17	D62004	Flat Washer 3/8	9
18	D62080	3/8-16 Locknut	9

Exploded Parts View – Hydraulic Fittings



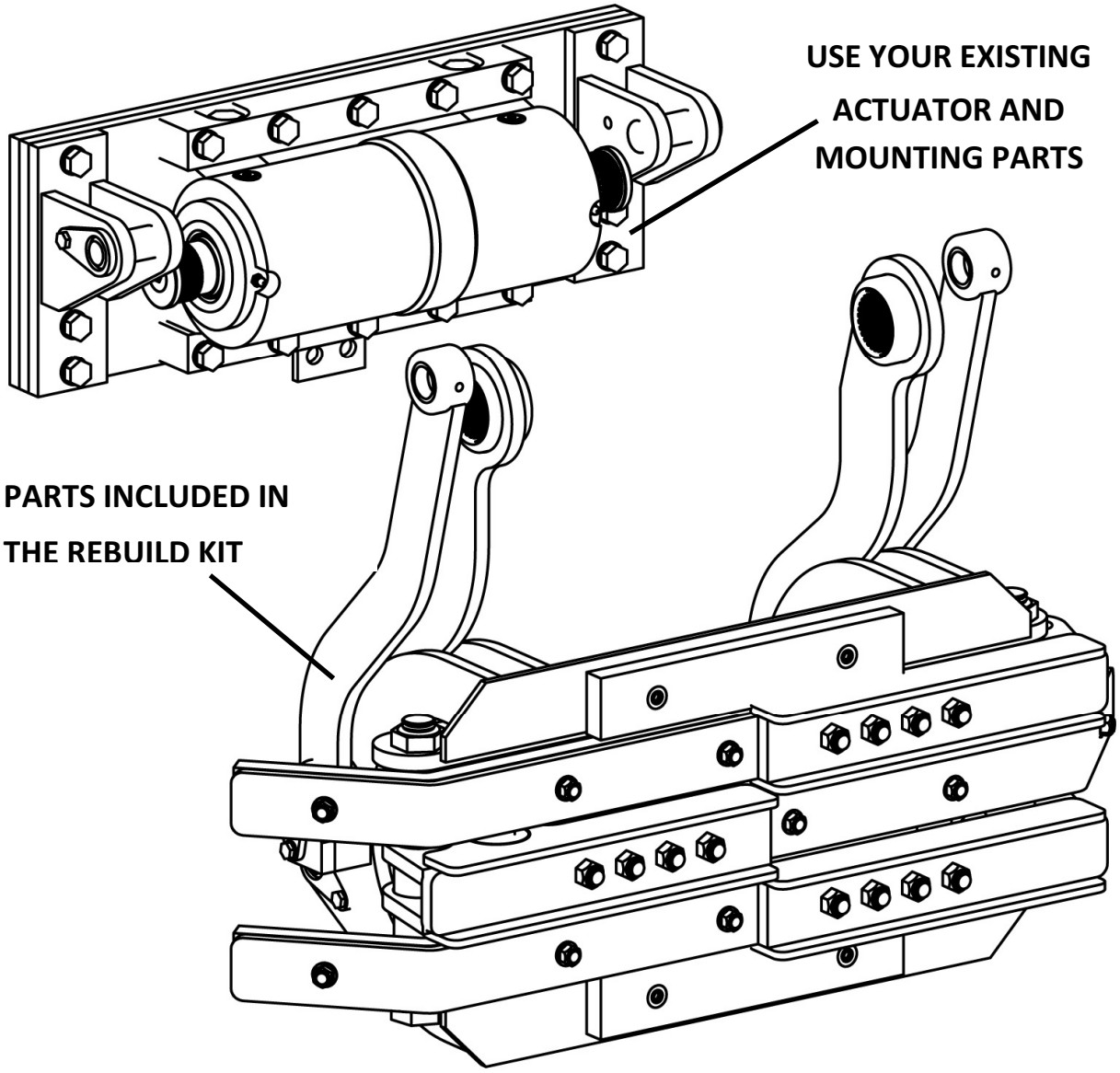
44	D63074	Adapter #6mo - #6mt	1
45	D63581	45 deg. Elbow - #6ft - #6mt	1
46	D63431	Reducer - #6ft - #8mt	1
47	D63562	Cap - #8ft * For shipping purposes. Remove to operate.	2
48	D63596	Connector #6mo - #6mo	1
49	D63575	One-Way Adjustable Flow Control Valve	1
50	D63663	45 deg. Elbow - #6mo - #8mt	1



1	D73060-7	Housing P1 (inner)	1
2	D73060-8	Housing P2 (outer)	1
3	D73060-2	Shaft	1
4	D73060-4	Piston Sleeve	1
5	D73060-5	Bearing Retainer	2
6	D63238-1	Splined Driver Hub	2
7	D73008	Retaining Disc	2
8	D62006	Bolt FHCS ½-13 x 1 1/4	2
9	D62014	Grease Zerk	2
10	D63238-106.2	Port plug #4 SAE (bleed ports)	2
11a	Sold as Bearing	Thrust Washer	2
11b	Kit D73060-3	Bushing	2
12a	Sold as	Wiper Seal	2
12b	27k Seal Kit	Cup Seal - Shaft	2
12c	D73060-1	Cup Seal – Piston Sleeve	1
12d		Cup Seal – Piston Sleeve (no energizer)	1
12e		O-ring Seal - Housing	1
12f		B/U Ring - Housing	1
12g		O-ring Seal - Housing	1
12h		Cup Seal – Piston Sleeve	1
12i		Cup Seal – Piston Sleeve (no energizer)	1
13	D63238-9	O-ring Seal - Adapter	2

Sometimes a lifter is damaged by collision, although the actuator and mounting parts are usually not damaged in this type of accident. Perkins offers a kit for the easy ordering of the necessary parts to quickly restore the lifter to good operation.

By ordering the Perkins part number D6080r-27k, you will receive a partially assembled assortment of parts, including the faceplate shell and all other pieces forward of the actuator. As shown below, everything is included minus the shaded components.



Perkins provides each finished cart lifter with ANSI-specified caution labels. They are clearly placed directly on the machine for easy viewing by the operators.

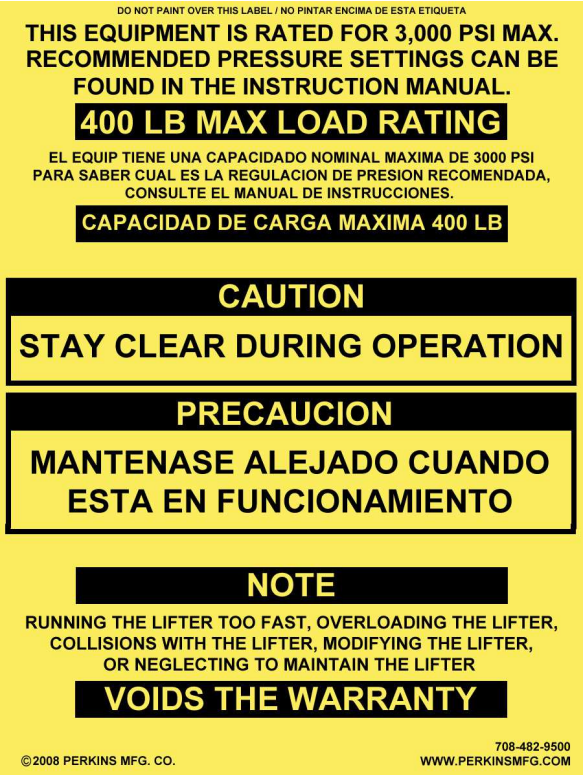
Should the cart lifter ever be re-painted, or if the labels are damaged beyond recognition, it is advised to replace the labels immediately to help keep your crew safe.

OHSA requires these labels to be in clear sight on the machine at all times. Responsibility to maintain proper caution and warning labels is the responsibility of the end-user.

Large Safety Label # D62474

Small English Label # D72114

Small Spanish Label # D72115


DO NOT PAINT OVER THIS LABEL / NO PINTAR ENCIMA DE ESTA ETIQUETA
THIS EQUIPMENT IS RATED FOR 3,000 PSI MAX.
RECOMMENDED PRESSURE SETTINGS CAN BE FOUND IN THE INSTRUCTION MANUAL.
400 LB MAX LOAD RATING
EL EQUIP TIENE UNA CAPACIDADO NOMINAL MAXIMA DE 3000 PSI
PARA SABER CUAL ES LA REGULACION DE PRESION RECOMENDADA,
CONSULTE EL MANUAL DE INSTRUCCIONES.
CAPACIDAD DE CARGA MAXIMA 400 LB
CAUTION
STAY CLEAR DURING OPERATION
PRECAUCION
MANTENASE ALEJADO CUANDO ESTA EN FUNCIONAMIENTO
NOTE
RUNNING THE LIFTER TOO FAST, OVERLOADING THE LIFTER,
COLLISIONS WITH THE LIFTER, MODIFYING THE LIFTER,
OR NEGLECTING TO MAINTAIN THE LIFTER
VOIDS THE WARRANTY
©2008 PERKINS MFG. CO.
708-482-9500
WWW.PERKINSMFG.COM

ATTENTION
TO MAINTAIN WARRANTY ON DUMPER:
LUBRICATE WEEKLY
OPERATE IN AN 6-8 SEC. CYCLE.
CAUTION
STAND CLEAR WHILE OPERATING
NEVER OPERATE DUMPER TO FULL UP POSITION
WHILE BLADE IS IN DOWN MOTION.
CALL (800) 882-5292
PERKINS MFG. ROMEOVILLE, IL PART # D72114

ATENCION
PARA MANTENER LA GARANTIA DE EL LEVANTADOR:
LUBRIQUE SEMANALMENTE
OPERE ENTRE 6-8 SEG. POR CYCLO
PRECAUCION
MANTENGASE ALEJADO MIENTRAS ESTA EN
FUNCIONAMIENTO NUNCA OPERE EL LEVANTADOR
HACIA ARRIBA CUANDO LA PLACA EMPACADORA
ESTA ABAJO Ó BAJANDO
CALL (708) 482-9500
PERKINS MFG. ROMEOVILLE, IL PART # D72115

TWO YEAR LIMITED WARRANTY

BEFORE ANY WARRANTY CAN BE ALLOWED ON ANY NEW EQUIPMENT, THE APPLICABLE REGISTRATION FORM MUST BE FILED WITH PERKINS MANUFACTURING COMPANY.

PERKINS MANUFACTURING COMPANY warrants its ROTARY cart lifters to be free from defects in material and workmanship under normal use for a period of two (2) years from the date of delivery to the first purchaser. This warranty covers all ROTARY cart lifters shipped after May 1, 2011.

This warranty is expressly limited to the repair or replacement of any component or part of any ROTARYcart lifter unit manufactured by PERKINS which is proven to PERKINS' satisfaction to have been defective in material or workmanship. This warranty shall not obligate PERKINS to bear the cost of labor or transportation charges in connection with the repair or replacement of defective parts, and it shall not apply to a product upon which repairs or alterations have been made unless authorized in writing by PERKINS. Any improper use, substitution of parts not approved by PERKINS, modifications other than those done at the factory or as authorized in writing by the factory, or any alteration or repair by others in such a manner which, in PERKINS judgment, materially and adversely affects the product shall void this warranty. Periodic maintenance is required to maintain warranty. Please refer to the maintenance section of the service manual for instructions.

PERKINS makes no warranty of products manufactured by others and supplied by PERKINS, the same being subject to warranties, if any, of their respective manufacturers.

PERKINS shall not assume any liability for any incidental, consequential, direct, or indirect damage, loss or delay of any kind, including, but not limited to, the loss of profits, product or time.

PERKINS warrants any service parts it may sell for a period of ninety (90) day from the date of delivery for replacement only. The warranty item must be returned to PERKINS for evaluation upon its request. The cost of labor to replace such part shall be the responsibility of the owner. PERKINS does not warrant any used parts.

PERKINS, whose policy is one of continuous improvement, reserves the right to improve its products through changes in design or materials as it may deem desirable without obligation to incorporate such changes in products of prior manufacture.

THE ABOVE WARRANTY SUPERCEDES AND IS IN LIEU OF ALL OTHER EXPRESS OR IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITING, ANY IMPLIED WARRANTIES OF MERCHANABILITY OR FITNESS FOR A PARTICULAR PURPOSE. NO EMPLOYEE OR ANY OTHER REPRESENTATIVE OF PERKINS IS AUTHORIZED TO CHANGE THIS WARRANTY IN ANY WAY OR TO GRANT ANY OTHER WARRANTY. ANY LEGAL ACTION CONERNING THIS WARRANTY OR THE PRODUCT INVOLVED – INCLUDING, WITHOUT LIMITING, ANY ARBITRATION OR ADMINISTRATIVE PROCEEDING – SHALL BE GOVERNED BY THE LAWS OF THE STATE OF ILLINOIS, WHICH SHALL BE APPLIED AS THE CHOICE OF LAW.